

U.S. Serial No.: 10/691,479

Filed: October 22, 2003

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Complete Listing of Claims:

1. (Previously Presented) A method of treating a volume of water to maintain a predetermined amount of a water treatment chemical in the volume of water over a time period comprising,
determining an amount of a water treatment chemical to be preserved in a volume of water to be treated,
calculating a maintenance dose of the chemical to be added to the volume of water to maintain about the amount of the chemical in the water over the time period,
providing a source of the chemical, and
supplying the maintenance dose of the water treatment chemical to the volume of water,
wherein the maintenance dose is calculated according to equation (1):

$$MD = (PV) (DC) \quad (1)$$

where

MD = Maintenance dose of water treatment chemical (oz.);

PV = Volume of water to be treated (gallons); and

DC = Consumption of water treatment chemical over the time period (oz. per 1000 gallons);

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and wherein the supplying of the maintenance dose is performed by a pump having a pump tube displacement and which is caused to operate for a run time determined according to equation (2)

$$RT = ((K) (MD) / (PRPM \times PTD)) \quad (2)$$

where:

RT =Run time of pump (sec)

PRPM =Pump speed (RPM)

PTD =Pump tube displacement (ml)/pump revolution

K = 1776 ((sec-ml)/(min-oz)), and

MD is defined as in equation (1).

2. (Original) The method of claim 1 wherein the source of the chemical is an aqueous solution of the chemical.
3. (Original) The method of claim 2 wherein the solution has about 0.5 wt.% (active) to about 80 wt.%(active) water treatment chemical.
4. (Original) The method of claim 1 wherein the pump is caused to operate by a computer programmed according to equation (2).
5. (Original) The method of claim 1 wherein the chemical is selected from the group consisting of algicides, sanitizers, oxidizers, chelating agents, pH control agents, corrosion inhibitors and stabilizers.

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6. (Original) The method of claim 1 wherein the chemical is selected from the group consisting of chlorine dioxide, lithium hypochlorite, sodium hypochlorite, (poly(hexamethylene biguanide) hydrochloride), 1,3-bromoclorodimethylhydantoin, and 1,3-dibromodimethylhydantoin, hydrogen peroxide, potassium monopersulfate, sodium perborate, sodium percarbonate, copper sulphate, copper citrate, copper EDTA (ethylene diaminetetraacetic acid), copper gluconate, colloidal silver, silver nitrate, poly(oxyethylene (dimethylimino) ethylene (dimethylimino) ethylene dichloride), sodium dimethyldithiocarbamate, 2-chloro4,6-bis(ethylamino)-5-triazine, zinc chloride, zinc oxide, and benzyl alkonium chloride.
7. (Original) The method of claim 1 wherein the chemical is selected from the group consisting of alkali metal hypochlorite, alkaline earth metal hypochlorite, chlorinated isocyanurates, halogenated hydantoins, alkali metal perborates, alkali metal percarbonates, copper salts, silver salts, quaternary ammonium compounds, polyquaternary ammonium compounds, zinc salts, chelating agents, fungicides, pH control agents, corrosion inhibitors, and stabilizers.
8. (Original) The method of claim 1 wherein the water treatment chemical is hydrogen peroxide.
9. (Original) The method of claim 3 wherein the water treatment chemical is sanitizer added in a maintenance dose of about 0.1 ppm/day to about 6 ppm/day.

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10. (Original) The method of claim 3 wherein the water treatment chemical is sanitizer added in a maintenance dose of about 1 ppm/day to about 3 ppm/day.
- 11.- 21. (Cancelled)
22. (Cancelled).